

# Atlanta Ham

OFFICIAL PUBLICATION OF THE ATLANTA RADIO CLUB, W4DOC

AUGUST 2005



## Shuttle Discovery launches successfully

Source: The ARRL Letter

Shuttle Discovery launches successfully (Jul 26, 2005) -- NASA's space shuttle fleet is no longer grounded. The Discovery orbiter took off from Cape Canaveral, Florida, right on schedule today on the Return to Flight mission (STS-114). The Discovery flight is the first for a NASA shuttle since the Columbia disaster on February 1, 2003, that killed seven astronauts. Discovery's seven-person crew includes six Amateur Radio licensees. The PCSat2 Amateur Radio payload also is aboard. US Astronaut Eileen Collins, KD5EDS, is the commander for mission. The international crew also includes James Kelly, KC5ZSW; Charlie Camarda, KC5ZSY; Wendy Lawrence, KC5KII; Soichi Noguchi, KD5TVP; Andy Thomas, KD5CHF/VK5MIR, and Stephen Robinson. Thomas and Lawrence both did tours of duty aboard the Russian Mir space station and conducted many SAREX (Space Amateur Radio EXperiment) school group contacts. Discovery is undertaking a 12-day flight to deliver equipment and supplies to the International Space Station, although Amateur Radio operation by the licensed shuttle crew

*(Continued on page 4)*

## FCC Proposes to Drop Morse Code Requirement for All License Classes

NEWINGTON, CT, July 20, 2005--The FCC has proposed dropping the 5 WPM Morse code element as a requirement to obtain an Amateur Radio license of any class. The Commission recommended the change to its Part 97 Amateur Service rules in a Notice of Proposed Rule Making (NPRM) in WT Docket 05-235. Any rule changes proposed in the NPRM would not become final until the FCC gathers additional public comments, formally adopts any changes to its rules and concludes the proceeding by issuing a Report and Order (R&O) spelling out the changes and specifying an effective date. That's not likely to happen for several months. The FCC declined in its NPRM to go forward with any other suggested changes to Amateur Service licensing rules or operating privileges beyond elimination of the Morse requirement.

"Based upon the petitions and comments, we propose to amend our amateur service rules to eliminate the requirement that individuals pass a telegraphy examination in order to qualify for any amateur radio operator license," the FCC said in its NPRM, released July 19. This week's NPRM consolidated 18 petitions for rule making from the amateur community--including one from the ARRL--that proposed a wide range of additional changes to the amateur rules. The FCC said the various petitions had attracted 6200 comments from the amateur community, which soon will have the opportunity to comment again--this time on the FCC's proposals in response to those petitions.

The Commission said it believes dropping Element 1--the 5 WPM Morse examination--would "encourage individuals who are interested in communications tech-

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## THE ATLANTA HAM

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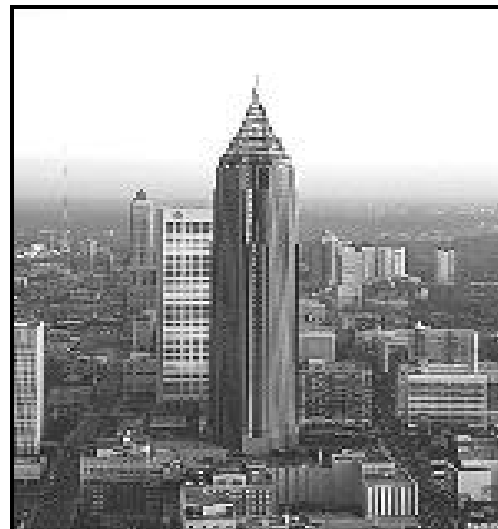
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## THE ATLANTA RADIO CLUB, W4DOC

Originally known as the "Atlanta Wireless Club," the Atlanta Radio Club is one of the oldest and largest amateur radio clubs in the United States. With nearly 200 members, the Club sponsors numerous activities and services for its membership and for the Atlanta area amateur radio community.

The Club is best known for its sponsorship of the annual Atlanta HamFestival, a Saturday event which hosts many vendors, exhibitors, and flea marketers of amateur radio equipment and other electronic equipment.



Bank of America Tower  
Site of Atlanta Repeaters:  
146.82(-), 224.34(-) and 444.825(+)

## W4DOC REPEATERS

The Atlanta Radio Club operates five repeaters at two locations. Currently our most active project is at the Bank of America Tower where we operate three repeaters at 146.82(-), 224.34 (-), and 444.825(+). On the web, go to <http://www.saf.com/arc/repeater.pdf> for a Acrobat 4.0 diagram of our system.

Our second location is the WFOX broadcast tower at Chestnut Mountain, south of Gainesville, GA. We operate two repeaters on 145.35(-) & 444.45 (+) . These repeaters are being renovated under the expert guidance of Dennis, KF4MHW. For pictures of that site, see <http://www.saf.com/arc/wfox.html>

The current schedule for net operations include the Sunday Night Net on 146.820 (Linked to 145.35 on FOX) at 8PM EST and the Southeastern VHF Net on Wednesday evenings at 9PM. The 146.820 machine can also be dialed into IRLP and SKYWARN/Peachtree City during inclement weather.

## ASSOCIATE ORGANIZATIONS



## MEETING NOTICE

### WHEN:

Thursday AUGUST 4, 2005  
7:30PM

### WHERE:

Red Cross 1955 Monroe Drive –  
Atlanta

### PROGRAM:

### TALK IN:

146.820 (-) PL 146.2

*The Atlanta Radio Club, Inc.*  
**P.O. BOX 720398**  
**Atlanta, Georgia, 30358**

#### **Robin Cutshaw, AA4RC**

President  
404 892-6789  
robin@interlabs.com

#### **Marcel Pitzini, W5BJV**

Vice President  
404 378-2772  
mpitzini@bellsouth.net

#### **Charles Golsen, W4CHG**

Treasurer  
404-688-6278  
cgolsen03@attbi.com

#### **Sandy Slider, N4QXI**

Secretary  
404 766-3398  
sliders2@mindspring.com

#### **John Talipsky Jr, N3ACK**

Activities Manager &  
Hamfest Chairman  
770-995-6446  
johnka4vqh@aol.com

#### **Andy Keels, KD4ABB**

Repeater Manager  
770-394-9052  
andyk@hvbi.com

#### **Penn McClatchey, K4PE**

Membership  
770-942-1207 - ext 425  
K4PE@saf.com

#### **John Talipsky Sr, KI4Y**

Newsletter  
678-985-1316  
john@talipsky.com

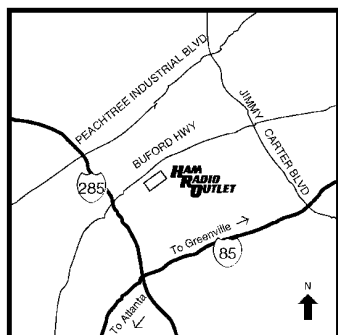


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# Shuttle Discovery launches successfully (Jul 26, 2005)

Source: The ARRL Letter

members from the space station's NA1SS is considered unlikely. PCSat2 will be installed outside the ISS during a spacewalk. Even in the hours before launch, NASA managers and engineers had been weighing the risks involved of launching Discovery in the wake of problems with a fuel-tank sensor that prompted shuttle managers to scrub the first Discovery launch attempt July 13.

The PCSAT2comm system will operate in the ITU Amateur Satellite Service in cooperation with ARISS and provide a PSK-31 multi-user transponder, an FM voice repeater for possible use with ISS Crew communications and an AX.25 packet system for use as a UI digipeater and for telemetry, command, control as shown in the block diagram. The PEC is basically a suitcase for travel that opens in space as shown above. The solar panel side of the PEC will contain new technology solar cells and the housekeeping telemetry from PCSAT2 will include data on the technical investigation of the radiation effects on these cells. See the Paper on PCSAT2's operation in the Amateur Satellite Service or the Full ITU rules as published by the IARU .

For the latest information on the Space Shuttle's Return to Flight, visit [www.nasa.gov/returntoflight](http://www.nasa.gov/returntoflight).



## FCC Proposes to Drop Morse Code...

*(Continued from page 1)*

nology, or who are able to contribute to the advancement of the radio art, to become amateur radio operators." The FCC said it also would eliminate a requirement it believes "is now unnecessary and that may discourage" current licensees from advancing their skills, and that it would "promote more efficient use" of current Amateur Radio spectrum.

The FCC cited changes in Article 25 of the international Radio Regulations adopted at World Radiocommunication Conference 2003 as the primary reason to go forward with eliminating Morse code as an Amateur Radio licensing requirement in the future. Among other changes, WRC-03 deleted the Morse testing requirement for amateur applicants seeking HF privileges, leaving it up to individual countries to determine whether or not they want to mandate Morse testing. Several countries already have dropped their Morse requirements.

ARRL CEO David Sumner, K1ZZ, said he was not surprised that the FCC proposed altogether scrapping the Morse code requirement. The League and others had called for retaining the 5 WPM requirement only for Amateur Extra class applicants. Sumner expressed dismay, however, that the FCC turned away proposals from the League and other petitioners to create a new entry-level Amateur Radio license class.

"We're disappointed that the Commission prefers to deny an opportunity to give Amateur Radio the restructuring it needs for the 21st century," he said. "It appears that the Commission is taking the easy road, but the easy road is seldom the right road."

Sumner said ARRL officials and the Board of Directors would closely study the 30-page NPRM and plan to com-

*(Continued on page 8)*

## METRO TESTING SESSIONS

Call ahead to verify session and be prepared with the appropriate forms and required papers. A small fee may be charged. Check with the VEC

### Athens, GA

1st Monday of each EVEN-numbered month at 7:00 pm 2095 W. Broad Street.  
Contact: EDWIN FUQUA, N4VA  
(706) 354-1727 E: edwin.fuqua@charter.net

### Cartersville, GA

1st Tuesday of each month at the Cartersville Kroger. Contact: JODI POWELL, AG4BK  
(770) 387-1591

### Gainesville, GA

1st Sunday of EVEN-numbered months Johnson High School, 3305 Poplar Springs Rd  
Contact: ALFRED WESTBROOK, KT4VP  
(770) 965-4901 Email: kt4vp@arrl.net

### Lilburn, GA

Gwinnett Amateur Radio Society  
4th Friday of Every Month at 7:00 pm  
St. John Neumann Church 801 Tom Smith Rd  
Contact: Howie Gould, W9HG (770)921-8362  
Headphones provided for CW tests.

### Milledgeville, GA ARRL / VEC

2nd Saturday of each month at 10:00 am at the Mary Vinson Memorial Library, 151 S. Jefferson St across from the Georgia Military Academy. Contact: OTIS MURPHY W4OY  
(478) 452-6394 Email: W4OY@arrl.net

### Peachtree City, GA

1st Thursday of EVEN-numbered months at 7:00 pm, and the 2nd Saturday of ODD-numbered months at 10:00 am at the Peachtree City Library, downstairs meeting room. Contact: JAN DUBROCA, KN4JD (770) 502-0760

### Snellville, GA

2nd Tuesday of every month at 7:00 pm at Walton EMC, 3645 Lenora Church Road.  
Contact: WAYNE TAYLOR, WD3CCA  
(770) 498-7759

### Stone Mountain, GA ARRL / VEC

Alford Memorial Radio Club  
2nd Saturday of ODD-numbered months at 8:30 am Stone Mountain United Methodist Church, 5312 W. Mountain St.  
Contact: BOB VARONE, W4ETN  
(770) 978 3179 Email: bvarone@juno.com

### Atlanta, GA

4th Sunday of each month, 2:30pm Georgia Tech  
Visit <http://cyberbuzz.gatech.edu/w4aql/test.html> for more information and to sign up for a mailing list.

No pre-registration is required.

Email: w4aql-ve@cyberbuz.gatech.edu (emails preferred over phone calls) Phone: 404-894-2936

## UPCOMING HAMFEST CALENDAR

### AUG 13, 2005

Ellijay Amateur Radio Society  
<http://www.qsl.net/w4hhh/>  
Talk-In: 146.985 +600 (PL 77Hz)

### AUG 20-21, 2005

Southeastern Division Convention  
Huntsville Hamfest Association  
<http://www.hamfest.org>

### SEPT 3-4, 2005

Shelby Amateur Radio Club  
<http://www.shelbyhamfest.org>  
Talk-In: 146.880 -600

### SEPT 17, 2005

Paulding Amateur Radio Club  
<http://www.pauldingarc.com>  
Talk-In: 146.895 MHz (PL 77)

### SEPT 30 – OCT 1, 2005

6th Annual Hamfest  
Ten-Tec  
<http://www.tentec.com>

### OCT 8, 2005

ARC of Augusta  
<http://www.qsl.net/w4dv>  
Talk-In: 144.890 input / 145.490 output

### OCT 22, 2005

Hamfest Chattanooga  
Chattanooga ARC  
<http://www.hamfestchattanooga.com>  
Talk-In: 146.790 MHz (-) 444.100 MHz (+)

### NOV 5-6, 2005

Georgia Section Convention/Stone Mountain Hamfest & Computer Expo  
Alford Memorial Radio Club  
<http://www.totr-radio.org>  
Talk-In: 146.76 (PL 107.2)

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# Improving Satellite Reception, Part 1

**The Satellite Beacon** A monthly article presented by the Project OSCAR ARC  
By Emily Clarke, W0EEC – VP of Project OSCAR

When investigating people who are unintentionally “jamming” a satellite (transmitting but unable to hear some-one respond) the first thing we hear is “everything works fine – I used a repeater just before the pass.” Following up we usually discover that the ham is using antennas designed for terrestrial use, or using receivers such as scanners that do not have good specifications. When we tell the ham that the repeater 40 miles away is transmitting 100w or more, and the satellite 1200 miles away is transmitting 0.5w, the ham is usually surprised. So what makes a good satellite receiving subsystem?

## Receivers

Receiver specifications are important and the primary number to look at is receiver sensitivity as this is the number that will tell you how strong a signal must be before the receiver can detect it. Sensitivity is measured in microvolts ( $\mu$ volts), and is usually rated for 10 db signal to noise for SSB/CW, or 12db SINAD (signal + noise + distortion) for FM. An excellent satellite receiver will have a sensitivity rating of 0.11  $\mu$ volts on SSB/CW but under 0.14  $\mu$ volts is adequate. FM sensitivity should be 0.22  $\mu$ volts or better (lower is better, higher is worse.) For example, the Yaesu 847, Kenwood TS-2000 and Icom 910H all meet or exceed these figures.

If you are only interested in using FM satellites there is an important caveat that you should consider, and one I was surprised to learn while researching this article. If you check the specifications for some full duplex dual band rigs (including handhelds) you will see that one band (Icom calls these left and right, others may refer to them as main and sub) may not be as sensitive as the other band. For example, my Icom 2720H mobile rig has a sensitivity of 0.2  $\mu$ volts on the left band, but 0.45  $\mu$ volts on the right band. The important point to note here is that you should know your receiver specifications and make choices wisely when choosing a radio, and a radio's band.

## Coaxial Cable and Connectors

At UHF and above frequencies, standard coax for HF and even VHF doesn't always work very well. If we were to use an example of 50 feet between your receiver and antenna, at 436 MHz (AO-51's downlink) RG-58 will have a loss of about 6db. This means that the signal will be only 25% as strong at the receiver as it is at the antenna.

Replacing RG-58 with RG-8X may help, but you will still lose 4db or more than half the signal.

Replacing RG-58 or RG-8X with LMR-400 or 9913 will get the losses below 2db, which make a huge difference. For example, LMR-400 at 436MHz will only lose about 1.3db. So the rule of thumb is “Use the best coax you can afford.”

If there were ever to be a Murphy's law about amateur radio it's that the connectors on the cable and the connectors on the thing you are attaching it to will not be the same. My rig has type-N connectors but the antenna has a UHF connector on it. The first reaction is to use an adapter, and while this will make the connection, it will introduce additional loss. So it's a good idea to build cables that match up with connections.

## Antennas

There are a number of factors here to consider about antennas and it isn't just gain. Gain is good but radiation pattern (and it's inverse, the receiving envelope) is equally important. One mistake we see is that the type of antenna being by our jammer is a 5/8 wave collinear, which has very good gain (typically 8db or better) and a narrow envelope. The problem is that the antenna is mounted vertical and the radiation pattern is horizontal, so 50% of the envelope is under ground. This is good for ground based repeaters, but really defeats the purpose for satellites as it will only receive the satellite when it is very low on the horizon.

One solution is to use an antenna that raises the envelope above ground and is rounder. Eggbeaters, quadrafilair helix and discone antennas work, but the tradeoff is gain. The rounder the pattern, the lower the gain and pattern is omnidirectional. So in addition to receiving the satellite an omni will receive noise from other sources. In a suburban neighborhood this can be a problem. While an omnidirectional antenna may eliminate the need for rotators, one should really consider the best solution.

A yagi antenna with an az-el rotator is always the best solution because the antenna is pointed directly at the satellite, but may not always work depending on where you live. If you absolutely have to be omni-directional make sure you have one that has a pattern that is higher than ground level, not below it.

**Next Month – Part 2, Pre-Amplifiers.**

**ATLANTA RADIO CLUB, INC P.O. Box 720398 Atlanta, GA 30358**

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## Georgia Section On My Mind...

*(Georgia Section On My Mind appears monthly on the ARRL Georgia Section webpage, [www.arrl-ga.org](http://www.arrl-ga.org), by the lovely Mrs. Susan Swiderski AF4FO — ARRL GA Sec.)*

June 4 --- Atlanta ARC Hamfest--- With cooler temperatures and daily thunder boomers in the whole week leading up to the Hamfest, members of the Atlanta ARC were probably more than just a little nervous that Mother Nature would rain on their parade and keep the ham community away in droves. (You might say that their spirits were a little 'dampened'...) But ol' Ma Nature must love a good

### This was a good solid Hamfest!

Hamfest as much as we do, because she sure smiled on us, with no more tears (i.e. rain) and bright afternoon sunshine. And plenty of hams were in attendance from all over the state, providing plenty of opportunities for wheelin' and dealin' and chewing the fat.

SE Division Director **FRANK BUTLER, W4RH**, SE Vice Director **SANDY DONAHUE, W4RU**, Rocky Mountain Vice Director **BRIAN MILESHOSKY, N5ZGT**, and that chief BBQ connoisseur **DAN HENDERSON, N1ND**, ARRL Contest Manager, and I all spent a good bit of time manning the ARRL booth, answering questions, signing up new

members, and chatting with friends, old and new.

The Southeast Contest Club held a meeting onsite, and it was a real pleasure to sit in with them. (Racking up seven-digit scores in a contest is second nature for these guys!) One of their members is **JOHN LANEY, K4BAI**, and I commented to him about his performance in the CW Pile-Up contest in Dayton, where he managed to pull out 51 callsigns from the jumble of a hundred. Having heard the tape, I thought that was amazing. Funny thing was, John told me that he'd been under the weather while in Dayton, and was a little drowsy from the medication he was taking when he entered that contest... so he coulda done even BETTER!!! Contesters are like the Michael Jordans of amateur radio; they always put in amazing performances, but are always looking to do better in the next game. And with the enthusiasm and skill in this group, I have no doubt that they will.

This was a good solid Hamfest. The Atlanta ARS has found a good "home" at Jim Miller Park, and they continue to find ways to make that "home" a place that hams want to visit. Good job! Many thanks for all the efforts made by club members, and as always, thanks to each and every one of you who were able to attend. It was good to see you, and hope to see you all back there again next year.

73, Susan [af4fo@arrl.org](mailto:af4fo@arrl.org)  
(Send me your news and tech tips!!)  
ARRL Georgia Section Manager

ATLANTA RADIO CLUB, INC  
PO BOX 720398  
ATLANTA, GA 30358



## **MEETING NOTICE - THURSDAY AUG 4, 2005**

### **FCC Proposes to Drop Morse Code...**

*(Continued from page 4)*

ment further after they've had the opportunity to consider the Commission's stated rationales for its proposals.

In 2004, the ARRL filed a Petition for Rule Making asking the FCC to amend Part 97 to complete the Amateur Service restructuring begun in 1999 but "left unfinished." The League called on the FCC to create a new entry-level license, reduce the number of actual license classes to three and drop the Morse code testing requirement for all classes except for Amateur Extra. Among other recommendations, the League asked the FCC to automatically upgrade Technician licensees to General and Advanced licensees to Amateur Extra. In this week's NPRM, the FCC said it was not persuaded such automatic upgrades were in the public interest.

The FCC said it did not believe a new entry-level license class was warranted because current Novice and Tech Plus licensees already can easily upgrade to General. "We also note that, if our proposal to eliminate telegraphy testing in the amateur service is adopted," the FCC continued, "a person who is not a licensee will be able to qualify for a General Class operator license by passing two written examinations, and that a person who is a Technician Class licensee will be able to qualify for a General Class operator license by passing one written examination." The FCC said it does not believe either path to be unreasonable.

The FCC also said that it's already addressed some of the other issues petitioners raised in its "Phone Band Expansion" (or "Omnibus") NPRM in WT Docket 04-140. In that proceeding, the Commission proposed to go along with the ARRL's Novice refarming proposal aimed at reallocating the current Novice/Tech Plus subbands to provide additional phone spectrum. Under the plan, Novice/Tech Plus licensees would be granted CW privileges in the current General CW subbands.

A 60-day period for members of the public to comment on the FCC's NPRM in WT 05-235 will begin once the NPRM appears in the Federal Register. Reply comments will be due within 75 days of the NPRM's publication in the Federal Register.